



# COMPARATIVE STUDY OF DIFFERENT TEACHING METHODOLOGIES USED FOR DEVELOPING BETTER UNDERSTANDING OF DRUG FORMULATIONS IN SECOND YEAR B.A.M.S. STUDENTS

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## ABSTRACT

**BACKGROUND:** Drug formulations are the Ayurvedic medicines which forms an important part of the curriculum of B.A.M.S. These are first introduced to a Second Year B.A.M.S student in Rasashastra and Bhaishajya Kalpana subject. It includes right from its ingredients to the preparation method to the indications and contraindications. Now the number of ingredients varies for each formulation and for a student to remember them is a tough part. Thus to discover newer teaching methods to the existing Lecture method was the core objective of this study. It does not endure to underestimate the Traditional teaching method rather to find other collaborative methods whose integration would help in better understanding of these formulations. **METHODS:** 3 teaching methods, Traditional teaching, Seminar method and Tutorial method were selected. A group of 15 students of Second Year B.A.M.S voluntarily participated and were taught 2 different drug formulations using each of these methods every week. At the end of each session a feedback form was circulated. **RESULTS:** 36% felt Seminar was excellently well organized. 47% felt Tutorial session was excellent in Arousing interest. 57% observed that the Seminar method was excellent in increasing understanding of the topic whereas with 53% giving tutorial excellent in Interactive category. Although 27% felt there was chaos yet 80% felt that equal opportunity was given to all to express their views in Tutorial session. **CONCLUSION:** There was found to be marginal difference in the results of about 10-15%. It was also noticed that these methods were appreciated and welcomed by the group. And thus we could conclude that each method is special in its own way and if we integrate various methods during teaching separate topics to students it will be better taken and grasped by the students. Some valuable inputs were also received from the students for improvising these methods.

**KEY WORDS:** Tutorial, Traditional teaching, Seminar, B.A.M.S., Ayurveda.

## INTRODUCTION:

Medicines are very crucial in treating diseases and their proper knowledge will result in their appropriate usage whereas improper or insufficient knowledge could lead in causing irreversible damage. Thus while learning about these formulations one needs to be well versed with their ingredients, properties of each of these ingredients, dosages, indications, contraindications, shelf life, vehicle to be used, time of administration, route of administration and duration for which it could be administered. For a medical student of any medical system thus having proper knowledge of these drug formulations is mandatory.

And so here comes the role of the teacher in teaching these formulations in the most appropriate way or in a way that could be best understood by the student and would imbibe in their memory for a long time to come.

Traditional teaching has been in the education system since ages and it is still the chief method to address a big class and to impart knowledge to a larger group at one time. Yet from time to time teachers or the education system have discovered or explored newer methods to mask the lethargy caused by this chief method. And so in giving due respect to the traditional method of delivering lecture this study inculcates in introducing few different methods which could increase student's participation and would focus on being more student centric rather than just teacher centric.

This study also emphasizes the need to use various methods while teaching rather than sticking to just one method. Although a lot of research has been done on teaching methods in medical education system, in Ayurveda it still has a long way to go.

## MATERIALS AND METHODS:

The study began after taking Institutional Ethics Committee's permission.

**Materials:** Chalk and Board and Ayurvedic texts.

**Methods:** Three methods (1) Traditional teaching method (2) Tutorial method<sup>1</sup> and (3) Seminar method<sup>2</sup>

In Traditional teaching the teacher taught the formulations to the students using chalk and board and asking questions in between.

In Tutorial method everyone prepared in advance about the formulations. During the session open discussion, reading and interaction took place. Each one contributed and shared their information.

In Seminar method the students played the role of the teacher. Two students prepared one formulation each and presented the same to the study group. Chalk and board were used during teaching. This was followed by question and Answer round.

**Population:** 15 students. Duration: 1 hour for each session

**Drug formulations:** 2 formulations for each method. *Arogyavardhini*<sup>3</sup> and *Chandraprabha vati*<sup>4</sup> for Traditional teaching, *Sootshekhar rasa*<sup>5</sup> and *Laghuseekhar rasa*<sup>6</sup> for Tutorial method and *Shankha vati*<sup>7</sup> and *Sanjeevani vati*<sup>8</sup> for Seminar method.

**Feedback forms:** These were distributed at the end of each session. Separate feedback form for each method was prepared. It had 6 questions. 4 questions were common to all the method, 2 questions specific to the method and last question was open ended asking for any 2 suggestions for improvement.

4 common questions: Whether the session 1. Increased understanding of the topic, 2. Aroused interest in the topic, 3. Was well organized and 4. Was Interactive.

2 Method specific questions: Traditional teaching and Seminar method-

1. The session was well audible
2. Use of teaching aids was appropriate.

These were to be answered on the scale of 0 to 5 where 5:Excellent, 4:Very Good.

3: Good, 2: Fair, 1: Poor, 0: Absent

For Tutorial-1. Whether there was chaos during the session.

2. Whether everyone got equal opportunity to express their views.

These were 'Yes' and 'No' types of questions. <sup>Appendix 1&2</sup>

## RESULTS:

Refer Figure 1, 2, 3, 1, 3.2, Table 1 and 2.

Suggestions received for Traditional teaching method:

- **Power point** presentation needed.
- **Advance intimation** of the topic to be taken.
- Use of **mnemonic** to remember contents.
- **Case** presentations.
- Provide **short notes**.
- Compel to by heart **sutras** of formulations.
- **More interaction** between students was needed.

Suggestions received for Tutorial method:

- **Puzzles** to be included.
- **Contraindications** of the formulations should be discussed
- **Detail mechanism** of the formulations as per disease should be discussed.

Suggestions received for Seminar method:

- **Ingredients** should be written along with quantity on the board.

- Ingredients should be discussed in detail.
- Practical sessions of medicinal preparation should be included.

### DISCUSSION:

The whole study of imparting knowledge using the above said 3 teaching methods was a rich experience. The students too received them very well and were totally involved in making this study reach its meaningful end.

The mere fact that their feedbacks were taken and valued was an important aspect of this study. In the beginning they had reservations against giving critical feedback but when they were ensured that their names were not to be mentioned on the forms just a tick was enough and any suggestions were welcomed did they abide with ease. As a teacher reading the feedback was a bit nerve wrecking for me at first but then soon I could look at it as an opportunity to improve my skills as a teacher. The study gave us mixed results. Because there was marginal difference of 10-15% observed in each category. And yet the one that excelled was taken into consideration. Teaching is an art and a teacher thus needs to be highly innovative while sharing and pouring his or her knowledge to the students. If a teacher could acknowledge this fact teaching and learning could become very interesting.

### LIMITATIONS OF THE STUDY:

Small study group was the major limitation of the current study. This was due to the unavailability of the regular batch as they were exam going.

### CONCLUSION:

With the above study we could conclude that not any single teaching method is perfect or enough to teach the drug formulations or rather any topic of a curriculum. Teaching requires a combination of various teaching methods. Innovation and improvisation from the routine is a must. Also updating the various teaching methods available from time to time is required. Feedbacks are highly essential to increase student participation in the teaching-learning process and also there is a dire need to make teaching more of student centric rather than just teacher centric.

### ACKNOWLEDGEMENT:

A sincere thanks to the second year BAMS students who participated in the study, and my colleague Dr. Subhashchandra Madavi for his support. Also all the post graduate students of my department.

### TABLES AND FIGURES:

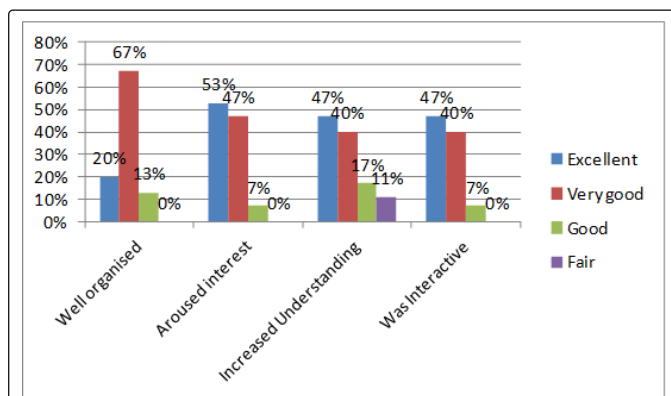


Figure 1: Results of Traditional Teaching method

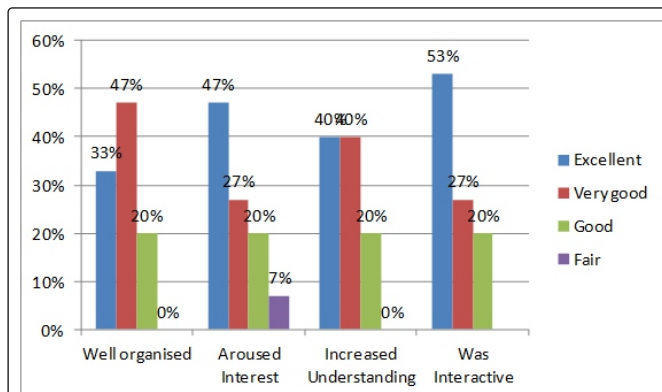


Figure 2: Results of Tutorial method

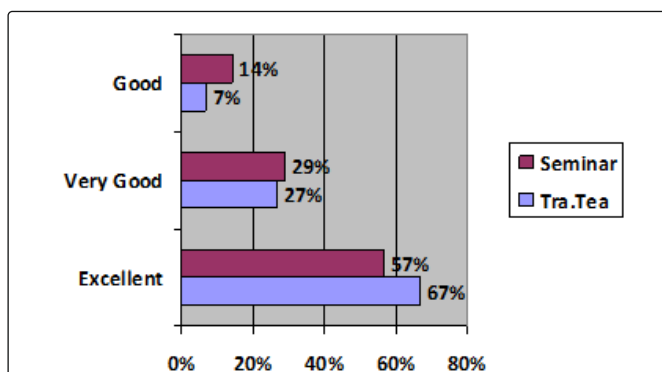


Figure 3.1: Results of Traditional Teaching & Seminar Method specific variables: Clearly Audible

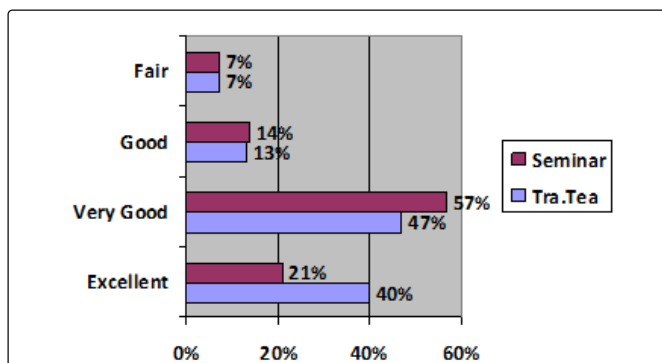


Figure 3.2: Results of Traditional Teaching Method & Seminar Method specific variables-Use of Teaching Aids (Chalk & Board)

Table 1: Comparitive results of all the methods

Variables/Grading	Excellent 5			Very Good 4			Good 3			Fair 2		
	Tra.Tea.	Tuto.	Sem	Tra.Tea.	Tuto.	Sem	Tra.Tea.	Tuto.	Sem	Tra.Tea.	Tuto.	Sem
Well organized	20%	33%	36%	67%	47%	57%	13%	20%	7%	0%	0%	0%
Aroused Interest	53%	47%	43%	47%	27%	43%	7%	20%	7%	0%	7%	7%
Increased understanding	47%	40%	57%	40%	40%	29%	17%	20%	7%	11%	0%	7%
Was Interactive	47%	53%	21%	40%	27%	50%	7%	20%	21%	0%	0%	7%

Table 2: Results of Tutorial Method specific variables

Variables	Yes	No
Chaos	27%	73%
Equal opportunity	80%	20%

## APPENDIX

**Appendix 1: FEEDBACK FORM :TRADITIONAL TEACHING METHOD**

Answer the questions given below by marking on the scale of 0 to 5. (Where 0=Not at all, 1=Poor, 2=fair, 3=Good, 4= Very Good & 5=Excellent)

1. The lecture was organized properly.  

0	1	2	3	4	5
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2. The lecture aroused interest in the topic.  

0	1	2	3	4	5
---	---	---	---	---	---
3. The lecture increased the understanding of the topic.  

0	1	2	3	4	5
---	---	---	---	---	---
4. The lecture was interactive.  

0	1	2	3	4	5
---	---	---	---	---	---
5. The lecture was clearly audible.  

0	1	2	3	4	5
---	---	---	---	---	---
6. Use of teaching aids was appropriate.  

0	1	2	3	4	5
---	---	---	---	---	---
7. Write 2 suggestions for improvement in the lecture.
  - i.
  - ii.

**Appendix 2: FEEDBACK FORM: TUTORIAL METHOD**

Answer the questions given below by marking on the scale of 0 to 5. (Where 0=Not at all, 1=Poor, 2=fair, 3=Good, 4= Very Good & 5=Excellent)

1. The tutorial session was organized properly.  

0	1	2	3	4	5
---	---	---	---	---	---
2. The tutorial session aroused interest in the topic.  

0	1	2	3	4	5
---	---	---	---	---	---
3. The tutorial session increased understanding of the topic.  

0	1	2	3	4	5
---	---	---	---	---	---
4. The session was interactive.  

0	1	2	3	4	5
---	---	---	---	---	---
5. There was chaos during the tutorial session.  
 1. Yes    2. No
6. Everyone was given equal opportunity to express their views.  
 1. Yes    2. No
7. Write 2 suggestions for improvement in tutorial sessions
  - i.
  - ii.

**Appendix 3: Feedback form : Seminar Method**

Answer the questions given below by marking on the scale of 0 to 5. (Where 0=Not at all, 1=Poor, 2=fair, 3=Good, 4= Very Good & 5=Excellent)

1. The Seminar session was organized properly.  

0	1	2	3	4	5
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2. The Seminar session aroused interest in the topic.  

0	1	2	3	4	5
---	---	---	---	---	---
3. The Seminar increased understanding of the topic.  

0	1	2	3	4	5
---	---	---	---	---	---
4. The seminar session was interactive.  

0	1	2	3	4	5
---	---	---	---	---	---
5. The presenters were clearly audible.  

0	1	2	3	4	5
---	---	---	---	---	---
6. Use of teaching aids was appropriate.  

0	1	2	3	4	5
---	---	---	---	---	---
7. Write 2 suggestions for improvement in seminar sessions
  - i.
  - ii.

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